To: WUE Subcommittee and other interested stakeholders

From: Eric Poncelet and Bennett Brooks
CONCUR, Inc.

Date: October 28, 2002

Re: Draft Terms of Reference--Staff Work Group on Appropriate Urban Water Use Measurement

Cc: Tom Gohring
Program Manager, CALFED WUE Element

Attached is a copy of a draft Terms of Reference document for a proposed Staff Work Group on Appropriate Urban Water Use Measurement. The purpose of this staff work group is to assist CALFED in defining "appropriate" urban water use measurement.

Attached to the draft Terms of Reference and serving as an Appendix is a final version of CONCUR's Stakeholder Assessment Report on Urban Water Use Measurement. This Report served to inform the details of the Terms of Reference. It was based upon interviews with 25 stakeholders representing a cross-section of water suppliers, environmental organizations, CALFED agencies and partners, business groups, and citizen groups. We are providing this Report as an informational item. WUE Subcommittee discussions are expected to focus on the Terms of Reference.

The Terms of Reference document will be considered at the November 5th, 2002 WUE Subcommittee meeting. Please review carefully and be prepared to present any comments or feedback and to discuss next steps.

We look forward to your participation and input.

CALFED Water Use Efficiency Element:
Appropriate Urban Water Use Measurement--Staff Work Group
***Terms of Reference ***

PURPOSE:

The CALFED Bay-Delta Program[1] intends to convene an informal agency and stakeholder work group—the "Urban Water Measurement Staff Work Group"—to assist CALFED in developing a broadly supported definition for appropriate measurement of urban water use.

BACKGROUND:

In its August 2000 Record of Decision (ROD), the CALFED Bay-Delta Program committed, as part of its Stage 1 Actions associated with the Water Use Efficiency Element,[2] to initiate a public process intended to add greater definition to "appropriate measurement" as it relates to surface and groundwater usage. The ROD also committed to the following:

> "At the completion of this stakeholder/technical process, CALFED Agencies will work with the California State Legislature to develop legislation for introduction and enactment in the 2003 legislative session requiring the appropriate measurement of all water uses in the State of California."

CALFED WUE staff began its efforts to better define "appropriate measurement" by first addressing the agricultural dimension. It initiated an independent review panel to address appropriate measurement of agricultural water use in the summer of 2001. The panel is scheduled to complete its work in early 2003.

To satisfy its commitment to the urban dimension, CALFED intends to convene a Staff Work Group to help WUE staff develop a definition of appropriate urban water measurement. The Staff Work Group is to consist of urban water suppliers, environmental organizations, the business community, citizen groups, CALFED agencies, and other stakeholder interests.

CALFED has decided to pursue a stakeholder-based Staff Work Group for the following key reasons:[3]

- It contributes toward a better understanding of the breadth and complexity of the issues at stake.

[1] The CALFED Bay-Delta Program is a cooperative effort among state and federal agencies and the public to ensure a healthy ecosystem, reliable water supplies, good quality water, and stable levees in California's Bay-Delta system.
[2] The Water Use Efficiency Element is one of ten Program Elements common to the preferred alternative developed by CALFED.
[3] CALFED's decision to convene a Staff Work Group draws upon recommendations made in a Stakeholder Assessment Report on Urban Water Use Measurement (produced by CONCUR, Inc.). A copy of the Stakeholder Assessment Report is attached below (see Appendix 1 attached).

- It helps identify the information required to produce a well-informed definition.

- It addresses up front some of the concerns likely to arise in subsequent legislative processes.

- It can be conducted in a relatively short time with limited resources.

Staff Work Group deliberations will be supported by technical advisors. Staff Work Group meetings will also be open to the public.

OBJECTIVES:

The WUE Program is asking the Urban Water Measurement Staff Work Group to focus on two specific objectives. They are:

- Provide guidance to the WUE Program Manager on a definition of appropriate urban water use measurement capable of being supported by a broad cross-section of affected interests.

- Identify and recommend options for implementing appropriate urban water use measurement requirements in a fair, practical and broadly supported manner.

The Staff Work Group will not be asked to produce consensus agreements on the issues under discussion. Rather, the Work Group will serve as an informal sounding board, providing informed feedback to the WUE Program Manager.

Both of these recommendations – and any other guidance developed by the Urban Measurement Staff Work Group – will be vetted in subsequent public forums and with CALFED advisory and decision-making bodies.

APPROACH:

Scope:

CALFED recognizes that improved measurement of urban water usage can contribute toward water use efficiency in multiple ways. The Urban Water Measurement Staff Work Group's task will be to deliberate on the extent to which different types and levels of urban water measurement appropriately support CALFED's broader objectives.

The Staff Work Group will be expected to deliberate on the following key question: To what degree should the following be incorporated into a definition of appropriate urban water measurement: metering of retail service connections (residential, commercial, and industrial); sub-metering (e.g., of multi-family dwellings, multi-unit commercial enterprises); landscape metering and aerial surveys; recycled water metering; volumetric billing; or other measurement related methods?[4]

[4] This preliminary list of issues was informed by a Stakeholder Assessment Report on Appropriate Urban Water Use Measurement produced by CONCUR, Inc. (see Appendix 1).

The scope will be bounded. The focus will be on only those retail customers--residential, commercial and industrial--that receive water from urban water purveyors.

Participants:

CALFED seeks to convene a small, but broad-based Staff Work Group encompassing a diversity of interests in, perspectives on, and experience regarding the urban water measurement issues under consideration. The Staff Work Group should also be geographically diverse, including fair representation from both metered and un-metered parts of California.

To that end, CALFED proposes convening a Staff Work Group with representatives from the following groupings:

Group 1: Urban water suppliers (6-8 participants)
- 3-4 coastal representatives (including northern and southern CA)
- 3-4 Central Valley representatives

Group 2: Environmental representatives (up to 6 participants)
Including organizations able to provide a mix of geographical, water supply, water quality, and growth/planning perspectives

Group 3: Business groups (2-3 participants, including a geographic mix)
- Chamber of commerce
- Real estate developers/Building Associations
- Landscaping industry

Group 4: Citizen groups (2-3 participants, including a geographic mix)
- Environmental justice
- Consumer groups
- Taxpayer associations

Group 5: CALFED agencies and partners (5 participants)
- Department of Water Resources
- United States Bureau of Reclamation
- State Water Resources Control Board
- California Public Utilities Commission
- California Urban Water Conservation Council

Additionally, CALFED will seek participation by individuals able to satisfy the following criteria: 1) effective advocates familiar with the issues and willing to think outside the box; 2) collaborative problem-solvers focused on interests, not positions; and, 3) individuals capable and willing to participate consistently. CALFED will work with the individual stakeholder groups and agencies to identify and recruit participants who satisfy these criteria.

Tom Gohring, CALFED WUE Program Manager, will serve as the group's convener. Other CALFED and agency staff and consultants will support the deliberations, as necessary. CONCUR, Inc., the Bay Area-based firm that has facilitated the Independent

Review Panel on Appropriate Agricultural Water Use Measurement, has been retained by CALFED to facilitate these discussions.

Process and Schedule:

Producing a broadly supported definition of appropriate urban water measurement will require assembling pertinent background and technical information and using informed stakeholder deliberations to provide input on the appropriate scope and implementation of improved urban water measurement requirements. It will also require vetting this definition with CALFED advisory and decision-making bodies and the broader public. As noted earlier, CALFED's ROD calls for staff to work with the California State Legislature to develop legislation for introduction and enactment in the 2003 legislative session requiring the appropriate measurement of all water uses in California. This may require integration of the urban and agricultural definitions.

To help meet this ROD requirement, CALFED proposes the following multi-step process:

Step 1: **Assemble Technical Information**
Start date: October 2002 (2-4 months duration)
Staff will assemble and develop necessary background and technical information. Establish representation and participation for the Urban Water Measurement Staff Work Group. Inform these activities with guidance from an informal stakeholder sounding board.

Step 2: **Convene Urban Water Measurement Staff Work Group**
Start date: To be determined (3-4 months duration)
The Work Group's initial effort (1-2 meetings) will focus on background briefings and information sharing and is expected to last roughly one month. Subsequent deliberations (3-4 meetings) are expected to last 2-3 months. Additional work teams will be convened as necessary. At the end of this step, WUE Staff will produce a definition of "appropriate" urban water use measurement.

Step 3: **Conduct Extensive Public Outreach**
Start date: To be determined (2 months duration)
Staff will use public meetings, workshops, or other appropriate forums to solicit public input. Develop an approach for possible integration of agricultural and urban definitions of appropriate measurement.

Step 4: **Engage CALFED Decision-Makers and Commence Drafting Legislation**
Start date: To be determined (3-6 months duration)
Staff will foster discussions with appropriate CALFED stakeholder and decision-making bodies. As appropriate, staff will work with relevant legislative and CALFED Agency staff to develop draft legislation.

APPENDIX 1

STAKEHOLDER ASSESSMENT REPORT:
Appropriate Urban Water Use Measurement

I. BACKGROUND/INTRODUCTION

In its August 2000 Record of Decision (ROD), the CALFED Bay-Delta Program[1] committed, as part of its Stage 1 Actions associated with the Water Use Efficiency Element,[2] to initiate a public process intended to add greater definition to "appropriate measurement" as it relates to surface and groundwater usage. The ROD also committed to the following:

> "At the completion of this stakeholder/technical process, CALFED Agencies will work with the California State Legislature to develop legislation for introduction and enactment in the 2003 legislative session requiring the appropriate measurement of all water uses in the State of California."

CALFED WUE staff began its efforts to better define "appropriate measurement" by first addressing the agricultural dimension. It convened an independent review panel to address appropriate measurement of agricultural water use in the summer of 2001. The panel is scheduled to complete its work in early 2003.

CALFED is now preparing to launch a public process to inform a proposed definition of "appropriate measurement" of urban water use. To assist in these preparations, CONCUR, Inc., has conducted confidential interviews with 25 individuals representing a cross-section of water suppliers, environmental organizations, CALFED agencies and partners, business groups, citizens groups, and consultants. The water suppliers interviewed include coastal agencies with established metering programs, Central Valley suppliers in the process of meter retrofits, and Central Valley municipalities that do not have meters or commodity billing. A list of interviewees, developed with input from CALFED and the stakeholders themselves, is provided in the table below. A listing of the questions used to guide the interviews is shown in Attachment 1.

[1] The CALFED Bay-Delta Program is a cooperative effort among state and federal agencies and the public to ensure a healthy ecosystem, reliable water supplies, good quality water, and stable levees in California's Bay-Delta system.
[2] The Water Use Efficiency (WUE) Program is one of several Program elements CALFED is implementing through an integrated approach.

Fair Oaks Water District · Rich Plecker	Castaic Lake Water Agency · Mary Lou Cotton	Pacific Institute · Dana Haasz
League of Women Voters – CA · Roberta Borgonovo	Friends of the River · Betsy Reifsneider	California Water Service Company (Bakersfield District) · Tim Treloar
Natural Resources Defense Council · Ed Osann	CA Urban Water Conservation Council · Mary Ann Dickinson	Department of Water Resources · Luana Kiger
Consultant – Water Conservation · Larry Farwell	Regional Water Authority · Ed Winkler	Santa Clara Valley Water District · Walt Wadlow
US Bureau of Reclamation · Tracy Slavin · Lucille Billingsley	State Water Resources Control Board · Jim Bennett · John O'Hagan	Former City Of Fresno Conservation Manager · David Todd
San Diego County Water Authority · Bill Jacoby	East Bay Municipal Water District · Richard Harris	City Of Folsom · Gordon Tornberg
City of Sacramento · Jim Sequeira	Sacramento Suburban Water District · Byron Buck	Silicon Valley Toxics Coalition · Michael Stanley-Jones
CA Building Industry Association · Brian White	Sacramento County Taxpayers League · Joe Sullivan	

Attached is a summary report developed by CONCUR, Inc., based on our interviews. This report is intended to draw out and highlight key themes raised during the interview; it is not intended to be a comprehensive listing of all issues mentioned. No comments included in this report are attributed to specific individuals; rather, this report represents a synthesis across all interviews.

This summary report is divided into two main sections:

- ***Key Findings.*** This section highlights key areas of agreement, significant issues yet to be resolved, and suggested strategies for moving forward.

- ***Preliminary Recommendations.*** This section presents CONCUR's initial recommendations for structuring future stakeholder discussions on this topic.

The following supporting documents are attached:

Attachment 1: Interview Questions
Attachment 2: Preliminary Background and Technical Information Needs
Attachment 3: Possible Stakeholder Group Representation

II. KEY FINDINGS

Interviews with stakeholders yielded several overarching observations. These themes are summarized below under the following categories: shared goals and interests; key areas of potential or emerging agreement; other key stakeholder interests; significant issues to be resolved; and suggested strategies for moving forward.

A. Shared Interests And Goals—A Basis From Which To Build

Interview respondents from all sectors share a number of key interests pertaining to urban water measurement. Virtually all interviewees share goals related to: fostering the efficient (i.e., non-wasteful) use of water; improving the reliability of water supply (locally and statewide) through more effective water management strategies; adhering to existing laws and voluntary agreements (e.g., California Urban Water Conservation Council Memorandum of Understanding, Water Forum agreement); and assuring the fair treatment of retail consumers and water suppliers alike with regard to urban measurement requirements. Moreover, nearly all share the overarching goal of determining a definition of "appropriate" measurement that takes into account the interests and perspectives of all stakeholders throughout the state.

Respondents share several other interests less directly related to urban water measurement. These included the desire for good water quality; well-managed growth; well-informed consumers; and strong economic and environmental health at the state, regional, and local levels.

B. Key Areas Of Potential and/or Emerging Agreement

The interviews suggest that stakeholders are in potential or emerging agreement on several key points related to urban water measurement. These topics, summarized below, will likely provide an important foundation for future deliberations.

1. ***Water management benefits of urban water use measurement***
   There was strong agreement that water use measurement can help urban water suppliers manage water more effectively (e.g., detect leaks, plan for future water supply). Respondents also suggested that improved management by individual water suppliers facilitates water management efforts at the regional or state levels (e.g., in cases of drought) as well as local and regional efforts to manage growth. Finally, several of the respondents noted that there are existing policies or programs that depend upon accurate urban water measurement. Among these are water conservation best management practices—e.g., as called for by Urban Water Management Plans and the California Urban Water Conservation Council (CUWCC) Memorandum of Understanding (MOU)—and the evaluation of state and federally- supported water conservation program effectiveness.

2. ***Volumetric billing and water conservation benefits of urban water use measurement***
   A large majority of respondents noted that a major benefit of urban water measurement is that it allows for volumetric billing of water. This is important,

many respondents said, because it enables water suppliers to eliminate the subsidies and associated inequities inherent in a flat-rate billing systems. Respondents also generally agreed that the volumetric billing of water use enabled by measurement may contribute to water conservation by providing price signals for water users. Such water conservation was seen to provide benefits primarily with regard to water supply. Some respondents also noted potential benefits in the areas of water quality (by diminishing urban run-off) and wastewater treatment (by diminishing inflows to wastewater treatment plants). In addition, while respondents agreed that such benefits would support the statewide water supply picture, many were quick to point out that conservation benefits will also vary by region.

3. ***Implementation of appropriate urban water use measurement***
Respondents strongly agreed that a definition of "appropriate" urban water use measurement needs to take into account the different contexts and constraints facing water supply and conservation decisions throughout the state. For example, costs for meter retrofit can vary greatly, and the shift to meters and volumetric billing will create greater hardships for some water suppliers than for others. Most respondents felt that some form of "incentive"—primarily in the form of a subsidy (e.g., state or federal Water Use Efficiency grants)—would be appropriate to deal with cases of financial hardship. Examples include cases where meter retrofits are not locally cost effective or where water suppliers lack sufficient resources.

C. Other Key Stakeholder Interests

In addition to the shared interests summarized above, interviewees mentioned a variety of other interests related to urban water measurement. Among these were interests in fostering dependable, high quality, low-cost water; honoring responsibilities to effectively manage natural resources or provide high quality water; ensuring sufficient water supply to meet business and growth needs; protecting natural systems; fostering conservation; placing an equitable burden on all segments of society; limiting growth; ensuring fair tax rates; and preserving landscape aesthetics.

D. Significant Issues to be Resolved

1. ***Primary issues***: The interviews identified several key areas to address and resolve in determining what level or amount of urban water measurement is to be considered "appropriate." These include:

   · Metering: The appropriate use of "meters" was considered by respondents to be the most important issue facing efforts to improve current levels of urban water measurement. The scope of metering (i.e., what types of connections are to be metered) remains to be defined. All interviewees considered the appropriate metering of residential, commercial, and industrial service connections to be a critical component of this scope. Most interviewees also agreed that other forms of metering—including sub-metering of multi-family dwellings or multi-unit commercial complexes, landscape metering, wastewater metering, and recycled water metering—also merit further

discussion. Nearly all respondents felt that the issue of volumetric billing should also be included within this scope. The key questions here are: Should rate structures based upon consumption be instituted? And, if so, by what guidelines should this happen? Finally, several interviewees pointed out that a decision needs to be made whether metering requirements would be limited to retail customers receiving water from a water purveyor or extended to include users receiving water from private wells.

- Meter retrofit implementation issues: Respondents listed a host of critical issues pertaining to the implementation of any meter retrofit program that would need to be addressed in any discussions of "appropriate" urban water measurement. Among the key questions to be addressed are: Should meter retrofitting be voluntary or mandatory? Who would pay for meter (including sub-meter) retrofits? Who would implement and enforce any state legislation? Who would certify that meter installation / water conservation is taking place? And what is the appropriate phase-in of meters and volumetric billing for areas where they do not already exist?

2. Constraining factors and barriers to be addressed

In their discussions of meter and meter-retrofit related issues, respondents highlighted five general areas that they believed would have a constraining impact on efforts to increase current levels of urban water measurement.

- Equity issues: Many respondents suggested that "equity" and other "fairness" issues would have an important impact on meter retrofit efforts. Respondents varied widely, however, in their views of the equity issues involved. The primary equity concern of most respondents involved what was perceived as the unfair subsidization of water use. In situations where flat rates prevail, customers who conserve can end up subsidizing the water use of those who waste. Respondents mentioned other equity-related concerns as well. Some noted the need for equity between the residential, commercial, and industrial sectors. Several pointed toward the special challenges faced by those low-income families who might be disproportionately affected if their water bills were to increase. A few respondents suggested the need for some level of equity between agricultural and urban water measurement efforts. Finally, some pointed to the need for fair treatment of the different parts of California, arguing that different regions benefit and suffer unequally from water conservation investments.

- Economic barriers: Respondents generally considered rising costs to water suppliers to be among the most significant barriers to meter retrofitting. While most acknowledged that an individual consumer's bill might go up or down after a meter retrofit depending on their subsequent levels of consumption, it was generally agreed that the capital and operations and maintenance costs incurred would lead to an overall increase in costs that would need to shared among ratepayers. Several respondents also pointed out that the cost-effectiveness of metering and volumetric billing will vary per region. Sub-metering was generally described as being more expensive than regular metering.

- Political and institutional barriers: Respondents described a series of political and institutional barriers to meter retrofit efforts. Among the most important political barriers mentioned were: conflicts between state and local water laws, ordinances, and water rights; and the strong political opposition that might emerge from various sectors (e.g., consumers, realtors, anti-growth groups that link water measurement with growth policies). Examples of important institutional barriers included: costs, particularly given current state and federal budget shortfalls; and rate recovery restrictions placed on investor owned utilities (IOUs) by the California Public Utilities Commission.

- Social / psychological / cultural barriers: Interviewees also pointed toward various social, psychological or cultural factors as posing major constraints toward meter retrofitting efforts. Interviewees almost universally described water metering as a highly emotional and, at times, even ideological issue for many people in the Central Valley. Many respondents also stressed the importance of addressing the myriad "fears" that people have with regard to the issue of metering. Principle among these are: having to pay more for water, changing one's lifestyle, becoming more accountable for water use, loss of property value associated with landscaping aesthetics, loss of access to water, and governmental infringement on personal rights. Finally, interviewees noted that people bring with them vastly different understandings or levels of knowledge with regard to water issues. Some people view water as a "right," for instance, while others see it as a public trust. People also have divergent views on whether or not water measurement contributes to water conservation, on who benefits from water conservation, and on the value of statewide versus local efforts to manage water.

- Technical barriers: For the most part, respondents were less concerned by the technical barriers to meter retrofitting. However, many interviewees, including almost all water supplier representatives, pointed out that significant unknowns exist with regard to service meter installation. Meter retrofit may cause potential damage to water delivery systems. Installation in some areas like Sacramento will be complicated by the fact that many water lines run through people's backyards. Respondents familiar with sub-metering considered sub-meter installation to be more complex—both technologically and logistically—than service meter installation. Finally, respondents also noted that while the shift to volumetric billing systems will be more complicated for some water suppliers than for others, rate structure technologies are generally well understood.

E. Suggested Strategies for Moving Forward

In their discussions, respondents suggested a variety of strategies to address the above issues, barriers, and constraints. Some suggestions focused on strategies for addressing implementation issues. Other recommendations centered on the process CALFED should use to engage this topic with stakeholders.

1. Possible implementation strategies

- Equity issues: To resolve the equity issues mentioned above, some respondents called for metering and volumetric billing of all retail connections (industrial, commercial, and residential) serviced by water suppliers. Others, however, called for an approach to urban water measurement that attends to different regional conditions rather than a "one-size-fits-all" approach. Most felt that cost equity issues could be dealt with via appropriate rate structures.

- Cost Barriers: To address the cost barriers associated with meter retrofits, nearly all respondents called for significant "carrots"—primarily in the form of state or federal funding—to help subsidize installation and perhaps future operations where meters and volumetric billing are not cost-effective from the local perspective. Only a handful of interviewees suggested the use of penalties (e.g., in the form of restricted access to loans / grants, drought assistance, or CALFED facilities).

- Political barriers: To overcome political barriers and, in particular, the political pressure faced by locally elected politicians, many of the respondents spoke of the need for a strong mandate from the State legislature and other political leaders.

- Social, psychological and cultural barriers: Finally, to address some of the social, psychological, and cultural issues encumbering meter retrofitting, respondents stressed the need for a well-designed and implemented transition process. Here, interviewees mentioned the need for significant public outreach and education on meters, rates, water conservation benefits, and past successful retrofits; an incremental roll-out of meter retrofit programs (e.g., a 5-10 year transition phase); and dedicated customer service to address ratepayer concerns.

2. Possible public process strategies

In the interviews, CONCUR asked respondents to discuss possible processes for involving the public in CALFED's efforts to define "appropriate" measurement of urban water use. CONCUR requested feedback in particular on two specific models for providing public input to CALFED. The first involved a *stakeholder advisory group,* while the second involved an *independent expert review panel*.

Nearly all respondents supported the stakeholder advisory group model. Most also believed that this stakeholder process should be supported by appropriate technical expertise. Respondents cited several benefits associated with the stakeholder advisory group model. Among these, respondents believed that a stakeholder advisory group would be the most effective forum for: (1) incorporating the economic, political, and social contexts of the issue; (2) mirroring the many local interests at stake; and, (3) gaining stakeholder buy-in and establishing legitimacy. Most also felt that the issue was not characterized by significant scientific uncertainty. Several respondents voiced concern, however, that metering issues might be too contentious for stakeholder

deliberations and that consensus from such a stakeholder advisory group might be difficult to achieve.

Interviewees also suggested that the stakeholder process proceed in two general phases. The first would focus on information-sharing to ensure stakeholders are informed by a common base of understanding. (Specific needs are outlined below.) The second phase would consist of stakeholder deliberations on the key issues. Respondents presented a mixed assessment of the timeframe.

3. Representation

Respondents suggested a broad list of potential interest groups to be included in any stakeholder advisory process on urban water measurement. Among these are: water suppliers; environmental groups; federal and state agencies; social justice organizations; local government; the waste water industry; real estate developers and the building industry; consumer groups or taxpayer associations; anti-meter citizens groups; business and industrial representatives (e.g., agriculture, high tech, manufacturing, retailing); the landscaping industry, and the CUWCC.

Water suppliers should be selected for diversity in geographical location, size, growth pressure (low vs. high), function (wholesaler vs. retailer), status of water measurement (metered, non-metered, or transitional), billing system (volumetric vs. flat rate), ownership (public vs. private), and control over water (owners vs. contractors). Environmental groups should be selected for geographical location and a diversity of focal issues (e.g., water supply, water quality, growth). Local government should be selected by geographic location, status of water measurement (metered vs. non-metered), and type of official (elected vs. staff).

Some respondents also suggested that while it is important to include stakeholders who are familiar with the CALFED Program, it is also important to include representatives of the affected communities who have not been significantly involved with CALFED to date.

4. Information needs

Respondents offered several recommendations regarding the information needed to support stakeholder deliberations. Information needs most frequently cited included: legal background, including a description of federal, state, and local laws applying to water measurement; the status of urban water use measurement throughout the state; meter retrofit cost information; meter-induced water conservation data; cost-benefit analyses of meter installation for different regions of the state (including both economic savings and water savings); and comparisons of similar metered and un-metered cases. Other information requests included basic water supply information for California (broken down by surface water, groundwater, agricultural, and urban use), regional water balances, projected future water supply needs for the state and different regions, water pricing comparisons throughout the state, rate structure information, and examples of meter retrofit plans that have been or are being adopted. Finally, several of the respondents requested a clear definition of what constituted the boundaries of "urban" (e.g., as opposed to "agricultural") water use.

III. PRELIMINARY RECOMMENDATIONS

The following recommendations are driven by the above stakeholder interview findings and CONCUR's experience and best professional judgement.

A. Process Recommendations

1. Stakeholder participation

- **Convene a standing stakeholder advisory body.** CONCUR recommends that CALFED assemble a Staff Work Group to assist in the preparation of a definition of "appropriate" urban water measurement. We believe that such a stakeholder advisory group will help to: 1) establish a better understanding of the breadth and complexity of the issues at stake; 2) identify the information required to produce a well-informed definition; and 3) address up front some of the concerns likely to arise in subsequent legislative processes.

- **Use a Staff-driven effort.** It is our recommendation that discussions related to appropriate urban water measurement be focused around WUE staff-driven drafts. Such an approach is consistent with the nature of CALFED ad-hoc work groups. Moreover, it is our sense that a Staff-driven dialogue is necessary to provide the essential sideboards that will allow the WUE Program Manager to integrate stakeholder input into an approach consistent with ROD commitments.

- **Seek stakeholder input, not commitments.** The interviews suggest that achieving consensus among representatives of a diverse Staff Work Group may be difficult. We therefore recommend that the Work Group be structured to serve as an informal sounding board, providing informed feedback to the WUE Program Manager.

- **Support the Staff Work Group with technical expertise.** CONCUR recommends that the Staff Work Group be supported by technical advisors in the areas of urban water management, policy, law, and economics. We propose that the technical advisors assemble the needed background and technical information, make informational presentations at the beginning of the stakeholder deliberations, and support the process throughout. These technical experts should be selected with stakeholder input and buy-in. A list of Preliminary Background and Technical Information Needs is shown in Attachment 2.

- **Make Staff Work Group meetings open to the public.** Given the wide stakeholder interest in this topic, we recommend that Staff Work Group meetings be open to the public.

- **Foster formal and informal stakeholder review.** It is our recommendation that any work products developed with the input of Work Group participants be discussed with a broader set of affected stakeholders through the use of CALFED public advisory and decision-making bodies and public workshops.

Such wider vetting – and buy-in – is seen as necessary to garner the requisite legislative action and funding. It is also consistent with CALFED policies.

2. ***Preliminary scope***
CONCUR recommends that the preliminary scope of issues to be considered by the Staff Work Group include (minimally): metering of retail service connections, sub-metering (e.g., of multi-family dwellings), landscape metering, wastewater metering, recycled water metering, and volumetric billing. The Staff Work Group would deliberate on the extent to which these measurement and measurement related strategies should fall under a definition of "appropriate" urban measurement.

3. ***Preliminary stakeholder representation and selection criteria***:
CONCUR proposes that the Staff Work Group be drawn from the list of Potential Stakeholder Group Representation shown in Attachment 3. We recommend that the Staff Work Group be comprised of stakeholders representing 1) a balance of urban water supplier, environmental group, CALFED agency, consumer, and other interests; and 2) broad geographic diversity, including fair representation from both metered and un-metered parts of the state. CONCUR further recommends that individual stakeholder participants be capable of representing major interests regarding urban water measurement; familiar with California water policy and urban water delivery; willing to make a good faith effort to collaborate with others to inform CALFED efforts to define "appropriate" urban water use measurement; and willing to commit the time necessary to prepare for and attend meetings and brief their broader constituents as appropriate.

B. Schedule/Timeframe

CONCUR recommends that the process toward defining "appropriate" urban water measurement take place as follows:

Step 1: **<u>Assemble Technical Information</u>**
Duration: 2-4 months
Assemble and develop necessary background and technical information. Establish representation and participation for the Urban Water Measurement Staff Work Group. Inform these activities with guidance from an informal stakeholder sounding board.

Step 2: **<u>Convene Urban Water Measurement Staff Work Group</u>**
Duration: 3-4 months
The Work Group's initial effort (1-2 meetings) will focus on background briefings and information sharing and is expected to last roughly one month. Subsequent deliberations (3-4 meetings) are expected to last 2-3 months. Additional work teams will be convened as necessary. At the end of this step, WUE Staff will produce a definition of "appropriate" urban water use measurement.

Step 3: **Conduct Extensive Public Outreach**
Duration: 2 months
Use public meetings, workshops, or other appropriate forums to solicit public input. Develop an approach for possible integration of agricultural and urban definitions of appropriate measurement.

Step 4: **Engage CALFED Decision-Makers**
Duration: 3-6 months
Foster discussions with appropriate CALFED stakeholder and decision-making bodies and, as appropriate, legislative representatives.

We look forward to discussing these findings and recommendations with CALFED staff and affected stakeholder communities.

ATTACHMENT 1

INTERVIEW QUESTIONS
Appropriate Urban Water Measurement

Personal Background:

1. Please tell us a little about your professional background, your current position, and your responsibilities therein.

2. What has been your involvement to date in discussions related to water measurement?

Interests:

3. What, in your opinion, are the objectives or intended benefits of urban water measurement (e.g., to water users, to water suppliers, to the broader public)?

4. What are some of the possible detriments associated with urban water measurement?

5. What are your and / or your organization's interests in the issue of urban water measurement?

6. What do you see as the interests of other stakeholder groups?

Scope Issues:

7. CALFED is anticipating, in this process of defining appropriate measurement of urban water use, that one of the main issues to be addressed concerns the proposed installation of meters on all service connections. Is this assumption correct? What is your view on the need for metering?

8. In addition to the issue of metering, what other aspects of urban water measurement need to be addressed (e.g., volumetric billing, sub-metering, landscape metering, municipal self-metering, growth issues, water quality)?

9. What are some of the barriers – technical, economic, political, institutional, or social / psychological / cultural – to urban water use measurement?

10. Are there any general areas around which most stakeholders can agree?

11. What are the major areas of disagreement? Are there basic disagreements over fact?

12. What do you see as possible options for resolving some of these differences? Can these issues be resolved through discussion? Is more research needed? If so, what?

Process Issues:

13. The CALFED ROD calls for the use of a "public process" in the determination of appropriate measurement of water use. CALFED is envisioning one of two main ways by which to produce a proposed definition, both of which would be followed by an extensive public outreach process:
    a. Staff draft informed by stakeholder advisory work group
    b. Staff draft informed by independent review panel of experts

14. Which of these do you believe would be more appropriate, and why?

15. What information is required to support a process to determine appropriate measurement of urban water use?

16. Stakeholder process representation: If a stakeholder work group were convened to inform CALFED staff's proposed definition of urban appropriate measurement, what interests or perspectives need to be represented? What individuals / organizations should be included?

17. Can you recommend other individuals who should be involved in this interviewing process?

Other Comments, Questions, or Advice

18. Do you have any other questions, comments

ATTACHMENT 2

PRELIMINARY BACKGROUND AND TECHNICAL INFORMATION NEEDS
Urban Appropriate Measurement

PRIMARY IMPORTANCE: *Includes information deemed necessary for effective Staff Work Group deliberations*

Type Of Information	Information To Be Compiled[1]	Availability of Information[2]
California Water Data/Information		
1. Legal background—Description of federal, state, and local laws applying to water measurement (with appropriate history)	To be determined	Readily Available
2. Meter use in CA—Breakdown by area and by residential / industrial / commercial	Analysis of B&V Water Charge Survey indicating which public water systems use flat rates. Analysis of DHS PWS data showing number of unmetered connections by class and region.	Readily Available
3. Cost of meter installation for different areas of CA (installation / O&M)	Collect data from public water systems currently or recently undertaking large-scale meter replacement	Readily Available
4. Cost of sub-meter and other forms of meter installation for different areas of CA (installation / O&M)	Collect data from public water systems evaluating sub-metering programs. Primarily will be engineering estimates	Not readily available but could likely be assembled
5. Cost of switch to volumetric billing in different regions of CA	Collect data from public water systems that are currently or have recently switched to volumetric billing. Summarize cost to upgrade billing system	Not readily available but could likely be assembled
6. Examples of meter retrofit plans that have been / are being adopted (e.g., City of Davis, Fair Oaks Water District, San Juan Water District)	Collect data from public water systems that have adopted meter retrofit plans. Prepare 2 to 4 case studies	Readily Available
7. Comparisons of metered / un-metered areas for water conservation and water costs · Compare WUE in adjacent communities (e.g., Folsom & Roseville, Fresno & Clovis) · Compare WUE in single area before and after meter retrofit (e.g., Davis)	Summarize B&V water rate survey data showing relationship between commodity charge and average use. Group by region.	Not readily available but could likely be assembled

[1] Based upon preliminary consultations with CALFED staff and consultants.
[2] Based upon preliminary consultations with CALFED staff and consultants.

8. Cost-benefit analyses of different types of meter (e.g., service meter, sub-meter, etc.) installation for different areas / cities in CA—to include: · Water savings · Economic cost / savings—to include, if possible: a) avoided costs of not having to develop new water supply, b) cost of not metering--e.g., environmental costs related to diminished water quality, flows) · Description of how cost-benefit is being calculated	Provide 2 to 4 examples of CBA's done recently for metering. Data from CALFED grant apps.	May be available from CALFED grant application cost-benefit analyses prepared by water suppliers pursuing meter retrofit programs
California Water Data/Information		
9. Description of water conservation benefits of metering / volumetric billing	Summarize empirical studies measuring difference in use between metered and unmetered service areas; difference in use pre- post- metering	Readily Available
10. Description of dependence of BMP implementation upon water use measurement	Technical memorandum to workgroup outlining how water use measurement facilitates BMP implementation	Readily Available
11. Rate Structures – Description of how volumetric billing rate structures work	Distribute CUWCC Handbook on Rates; Distribute relevant sections AWWA M1 (Principals of Water Rates, Fees, and Charges)	Readily Available

SECONDARY IMPORTANCE: ***Includes information not considered essential for initiating the staff work group but which may be called upon later to address particular issues and concerns***

Type Of Information	*Information To Be Compiled*	*Availability Of Information*
12. Description of water cycles for different regions throughout the state showing open versus closed hydraulic loops and "real water losses" for different areas	To be determined	Readily Available
13. Projected future water needs in CA	Summary of Bull. 160	Readily Available
14. Where different regions get their water -- Groundwater versus surface water	Summary of Bull. 160	Readily Available
15. Drought impact on water supply for different areas of CA	To be determined	Not yet determined
16. Meter use in other states and US as a whole	To be determined	Not yet determined
17. Current measurement of urban water inflows	Analysis of DHS Public Water System Data	Not readily available but could likely be assembled
18. Survey of water prices throughout CA	B&V Water Charge Survey	Readily Available
19. Survey of wastewater prices throughout CA	B&V Wastewater Rate Survey	Readily Available
20. Description of link between water conservation and water quality	EPA Cleaner Water through Conservation http://www.epa.gov/water/you/intro.html	Not yet determined
21. Compare status of urban and agricultural water use measurement in CA	To be determined	Not readily available but could likely be assembled
22. Evaluate nature of relationship, if any, between water use measurement and growth	To be determined	Not yet determined

ATTACHMENT 3

POSSIBLE STAKEHOLDER GROUP REPRESENTATION

Appropriate Urban Water Measurement

Group 1: Water agencies (6-8 participants)

- 3-4 coastal representatives (including northern and southern CA)
- 3-4 Central Valley representatives
- Select for geographical location, size, wholesaler / retailer, metered / non-metered / transitional, commodity pricing / flat rate, low / high growth area, public / privately owned, own water versus contract for water, water providers / water and wastewater providers, water recycling, collaborative experience addressing metering issues (e.g., Water Forum agreement signatories)

Group 2: Environmental representatives (up to 6 participants)

- Mix of geographical, water supply, water quality, growth / planning perspectives

Group 3: Business groups (2-3 participants)

- Chamber of commerce (state level)
- Real estate developers / building associations
- Landscaping industry

Group 4: Citizen groups (2-3 participants)

- Environmental justice (especially an urban perspective)
- Consumer groups (or use water supplier customer service representatives)
- Taxpayer associations

Group 5: CALFED agency/partners (5 participants)

- DWR
- USBR
- SWRCB
- CPUC
- CUWCC